

SkyAzúl

EQUIPMENT SOLUTIONS

iFLEX5

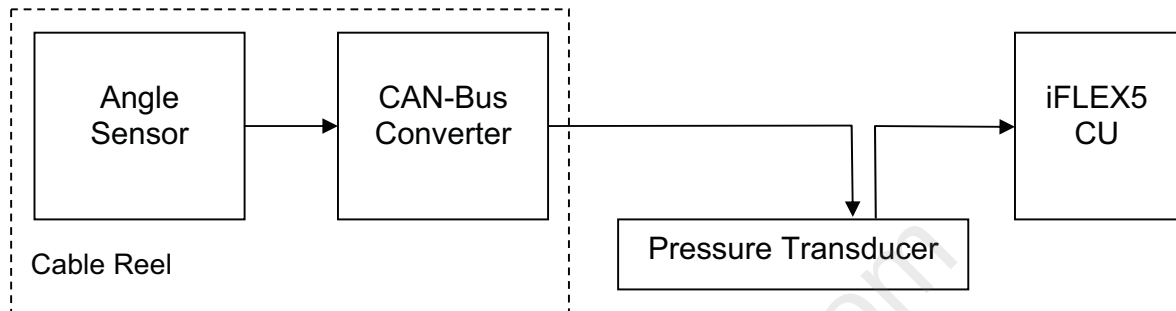


SERVICE MANUAL

5 ANGLE SENSING

The System measures the angle of the main boom of the machine with an angle sensor. The angle sensor is contained within the cable reel, located on the left side of the main boom.

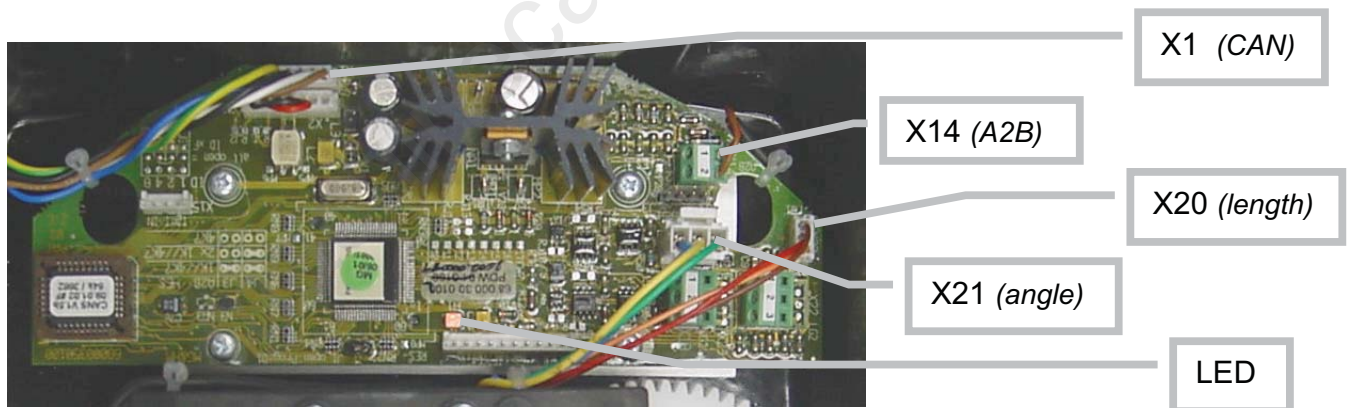
Block Diagram



The signal runs from the angle sensor to the Can-Bus converter board, both located in the cable reel. From there, it travels as digital information on the CAN-Bus to the pressure transducer, which acts as a T-connector to the main CAN-Bus running to the central unit.

So, what do you do when you are having a problem with your angle read-out?

Start by verifying the angle display. Refer to the section "[Troubleshooting A Sensor Problem Using The Display](#)" to call up the sensor signal on your console display. The CAN-Bus is digital and as such will either transmit the signal correctly or not at all. If your readings are off, you have to determine what is causing the problem (*reference the following flow charts*).



CAN-Bus electronics in cable reel.

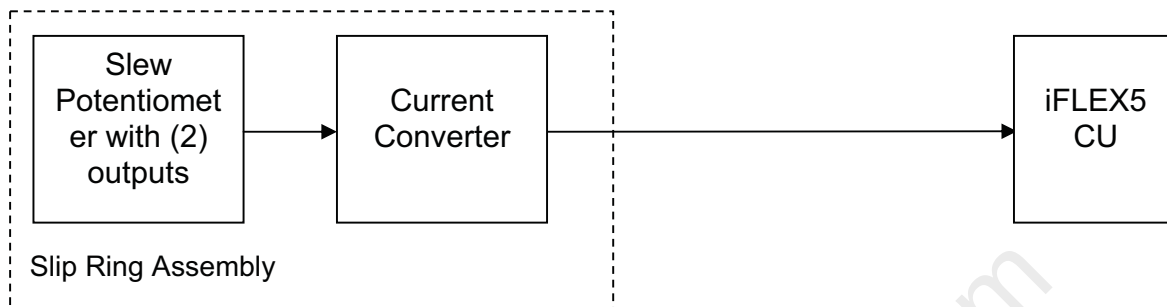
The angle sensor has a potentiometer built in that is driven by a pendulum. As the angle changes, so will the pendulum and with it the potentiometer's axle. The converter board supplies a constant voltage of 5V to the angle sensor and in return monitors the voltage of the potentiometer. The terminal used is X21. The angle sensor is connected as follows:

Terminal X21	
1	+ 5V
3	Signal
5	GND

8 SLEWING SENSING

The system measures the slewing (rotational position) of the crane's upper with a slewing sensor. The slewing sensor is contained within the slip ring assembly.

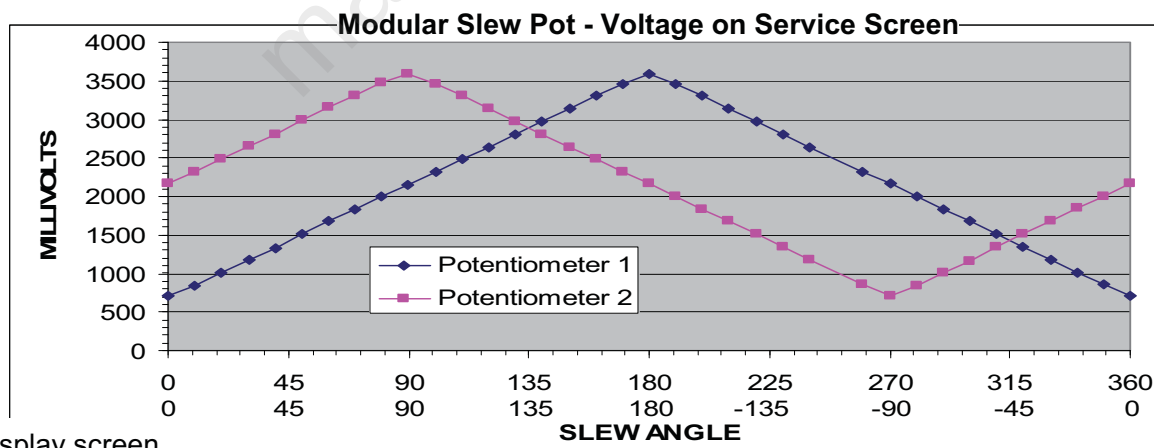
Block Diagram



The slew potentiometer has two potentiometers built in that are driven by the slip ring axle. As the slewing angle changes, so will the axle and with it the potentiometer's outputs. Use the display screen by pressing 'i' (info) twice to show all sensor inputs.

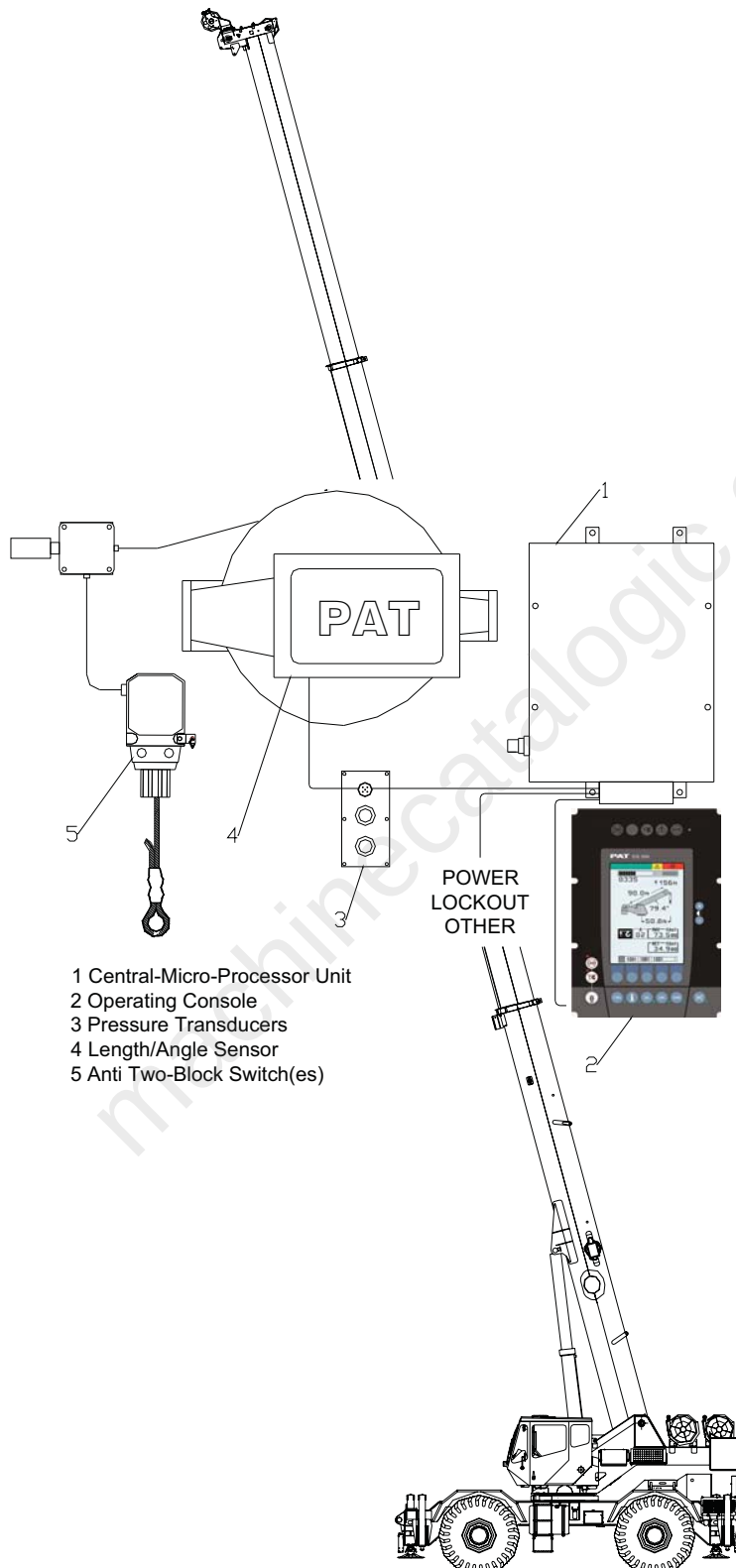
The table to the right show measured millivolt reading for the slew potentiometer.

ANGLE (deg)	SL ANG 1 (mv)	SL ANG 2 (mv)
0	717	2161
30.3	1174	2645
60	1680	3150
89.9	2158	3595
120.1	2641	3141
150.1	3144	2639
180	3595	2161
-150.1	3144	1681
-120.1	2642	1180
-90	2160	718
-60.1	1681	1168
-30	1172	1680
0	718	2161

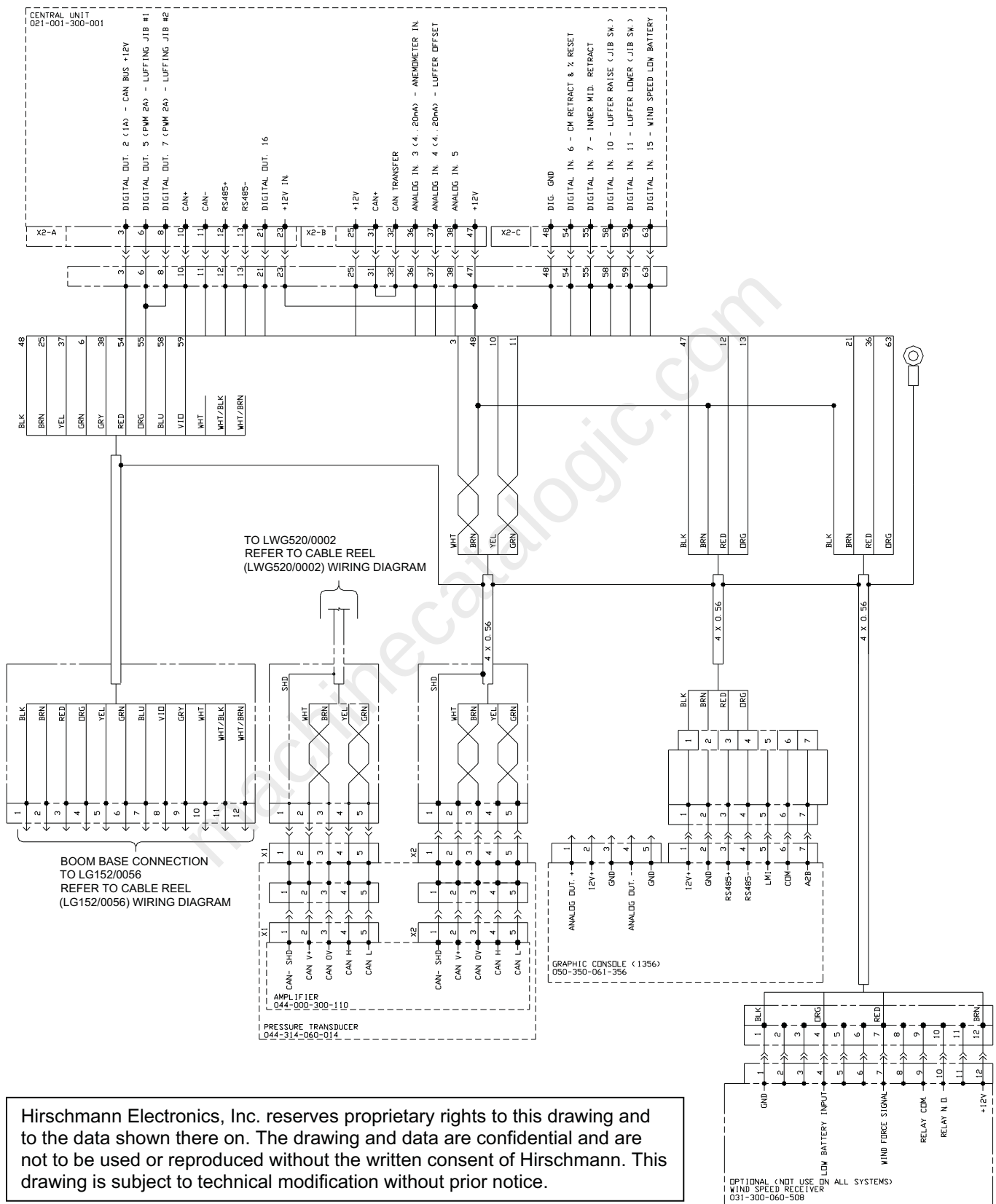


15 DRAWINGS

15.1 COMPONENTS OF THE LMI SYSTEM PAT IFLEX5



15.5.2 Console and Sensor Wiring Diagram



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16.10 WIRING HARNESS BOOM CONTROL, PART NO. 031-010-100-554

6 Cables for:

1. Console
2. Crane interface 7 conductors
3. Crane interface 24 conductors
4. LG152 cable reel
5. CAN bus cable
6. Optional radio wind speed receiver

**16.11 CABLE ASSEMBLY, 14M PART NO. 031-010-100-555**

18 ERROR CODES

The following Error Code Table gives a brief description of Error Codes elimination. Refer to the noted sections for detailed Troubleshooting information.

Error Code	Error	Cause	Elimination
E01	Fallen below radius range or angle range exceeded	Fallen below the minimum radius or gone past the maximum angle specified in the respective load chart due to luffing up the boom too far	Luff down the boom to a radius or angle specified in the load chart.
E02	Radius range exceeded or fallen below angle range	Gone past the maximum radius or fallen below the minimum angle specified in the respective load chart due to luffing down the boom too far	Luff up the boom to a radius or angle specified in the load chart.
E03	Non-permitted slewing zone (no load area)	The slewing zone with load is not permitted	Slew to permitted area
E04	Operating mode not acknowledged or non permitted slewing zone	- A non existing operating mode has been selected - The boom is in a non-permitted slewing zone	- Set the correct operating mode for the operating state in question - Slew the boom to a permitted area.
E05	Prohibited length range	- Boom has been extended either too far or not far enough, e.g. if it is prohibited to go beyond a certain maximum boom length or with load curves for jibs where the main boom has to be extended to a certain length - Length sensor adjustment has changed, e.g. the cable slid off the length sensor reel. - Clutch between length sensor pot and drive is defective	- Extend/retract boom to the correct length - Retract boom. Check the prestress of the cable reel (cable must be taut). Open the length sensor and carefully turn the length sensor pot counterclockwise until the detent by means of a screw driver - Replace the complete clutch including drive wheel and adjust length sensor pot as described above

Full Version Available

PAT iFLEX5 Load Moment Indicator Service Manual (190154_G)

PAT iFLEX5 load moment indicator service manual with troubleshooting, sensor calibration and error codes. 672-page PDF set. Instant PDF download.

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